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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,222	12/20/2001	Hashem Akhavan-Tafti	Lum. 4.1-77	3442
23700	7590	10/16/2003	EXAMINER	
LUMIGEN, INC. 22900 W. EIGHT MILE ROAD SOUTHFIELD, MI 48034			HUANG, EVELYN MEI	
			ART UNIT	PAPER NUMBER

1625

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/029,222

Applicant(s)

AKHAVAN-TAFTI ET AL.

Examiner

Evelyn Huang

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-- **Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 21-24 is/are rejected.
- 7) ☒ Claim(s) 11-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. Claims 1-24 are pending.

#### ***Claim Rejections - 35 USC § 112***

2. The rejection for Claims 1-9 under 35 U.S.C. 112, second paragraph is maintained for reasons of record. The rejection is applicable to new claims 21-23.

Applicant argues that many substituted groups are shown in the examples and the absence of a limiting list of substituents does not render the claims indefinite. The essential point being that the substituent groups allow the intended use to occur.

However, a full description of the chemical features of the substituent groups essential for the intended use to occur is not found in the specification. A mere recitation of the examples without fully defining the substituents fails to provide the metes and bounds required of the instant claims.

#### ***Claim Rejections - 35 USC § 112(1)***

3. The rejection for Claims 1-9 under 35 U.S.C. 112, first paragraph is maintained for reasons of record. The rejection is applicable to new claims 21-23.

Applicant maintains that numerous examples of various types of groups have been provided. Numerous compounds and methods of preparation are readily discovered by one of ordinary skill in the art. Applicant is not required to reiterate what is known in the art.

While a complete range of examples is not required to support the entire scope of the claims, the scope of the claims must be commensurate with that of the objective enablement. Since the instant claims encompass numerous classes of structurally diverse compounds, some of which whose structures are not fully described (see paragraph 4 below), and some are structurally unrelated to the example compounds, starting materials and the processes of making these compounds are not seen but required. Sources are

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particularly pertinent especially when the structures of these compounds are not fully defined. Absent sources, the public is offered mere language, rather than enablement. Ex parte Moersch 104 USPQ 122. In re Howarthe 210 USPQ 689. Since insufficient teaching and guidance have been provided in the specification, one of ordinary skill in the art therefore would not be able to make and use all the inventions as claimed without undue experimentation.

***Claim Rejections - 35 USC § 102***

4. The rejection for Claim 1, 3, 4 under 35 U.S.C. 102(b) as being anticipated by Akiba is withdrawn in view of the amendment incorporating the limitation that R1 and R2 together does not form a ring, thereby setting a demarcation from the prior art compound wherein R1 and R2 form a ring.

***Claim Rejections - 35 USC § 103***

5. The rejection for Claims 1-4 under 35 U.S.C. 103(a) as being obvious over Akhavan-Tafti (6126870) is maintained for reasons of record. The rejection is applicable to claims 10, 21-24.

Akhavan-Tafti generically discloses a chemiluminescent acridine compound of formula I (column 6), which embraces the instant. Specific compounds are described (column 18, Table, compounds 7-13; column 21, acridan derivative 20).

The acridan compound 20 differs from the second compound of the first row in instant claim 10 in having an O instead of the instant S on the ketene carbon.

Akhavan-Tafti, however, teaches that O and S are optional choices (column 6, lines 13-14). The method of preparing the compound where both Z groups are S as recited in the instant is described on column 15, lines 3-38.

At the time of the invention, one of ordinary skill in the art would be motivated to replace the O of the prior art example compound with the alternative S as taught by

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Akhavan-Tafti to arrive at the instant invention with the reasonable expectation of obtaining an additional chemiluminescent compound.

Applicant argues that the specification has discloses that the present compounds are unexpectedly superior than the prior art compound (page 18, line 25 to page 19, line 15). However, only general statements are made in the cited pages without showing a side by side comparison between the closest prior art compound and the instant compound. Unexpected results therefore have not been established and the instant remains obvious over Akhavan-Tafti.

### ***Double Patenting***

6. The provisionally obviousness-type double patenting rejection over claims 1-11 of copending Application No. 10/205050 is obviated by the amendment incorporating the limitation that R1 and R2 together does not form a ring, thereby setting a demarcation from the copending compound wherein R1 and R2 form a ring.

### ***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-9, 21-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Although examples are given, a full written description for the substituents of the substituted alkyl, aryl, aralkyl and a full description for the substituent containing 1-50 atoms selected from C, H, N, O, S, P, Si and halogen atoms are not found in the specification. Since a compound is defined by its structure

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formed by specific number and types of atoms in a specific bonding relationship, the mere recitation of atoms in the instant fails to provide a full description of the compound.

*Allowable Subject Matter*

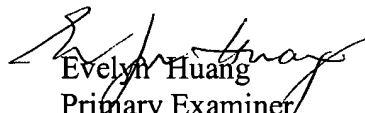
8. Claims 11-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Although Akhavan-Tafti generically discloses the instant (see paragraph 5 above), the instant has an alkyl or substituted alkyl attached to both of the thiols. Motivation to modify the prior art example compounds via multiple changes to arrive at the instant is lacking.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evelyn Huang whose telephone number is 703-305-7247. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alan Rotman can be reached on 703-308-4698. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4556 for regular communications and 703-308-4556 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

  
Evelyn Huang  
Primary Examiner  
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